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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/498,099	02/04/2000	John G. Waclawsky	CIS99-1714	8317

7590

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CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, MA 01581

EXAMINER

SHAH, CHIRAG G

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 02/26/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

4m

Office Action Summary

Application No.

09/498,099

Applicant(s)

WACLAWSKY ET AL.

Examiner

Chirag G Shah

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/09/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21, 24-31, 41 and 42 rejected under 35 U.S.C.

103(a) as being unpatentable over Rickard ("Mapping The Internet With Traceroute") in view of Hunt et al. (U.S. Patent No. 5,898,671).

Referring to claims 1, 5, 9, 11, 15, 19, 21, 41 and 42, Rickard discloses in pages 5, paragraph 4 to page 6 of the method and an apparatus of generating, for a data element (TTL), a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element; sending the data element to the node the network and receiving a signal from the node of the network (page 5, paragraphs 4 and 5), the signal (ICMP message) including an indication that the node of the network has removed the data element for the network. Rickard fails to disclose a second signal including a resource usage information describing usage of resources within the node of the network. Hunt discloses in the abstract, figure 1, column 2, lines 1-32, column 3, lines 20-55, and claim 9 and respective portions of the specification of a control technique, where a feedback message (backpressure signal) is sent back from a receiver to the transmitter, giving the status of the resource within the node. The backpressure signal is transmitted back

Art Unit: 2664

from the receiver (destination) to the transmitter indicative of the state of the fullness of buffer (resource) to the transmitter switch (source). Such feedback messages contain, the number of available resources, the number of cells held for each connection or the number of resources freed. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Rickard to include the teachings of Hunt in order to enhance performance and reduce congestion from occurring in the network.

Referring to claims 4, 8, 14, 18 and 24, Rickard discloses in pages 5 and 6 of a signal including an indication that the node of the network has removed the data element from the network. Rickard fails to disclose the method further comprises the step of extracting the resource usage information from the signal and updating contents of the database with the extracted resource usage information and tuning the node of the network based on the updated contents of the database. Hunt discloses in column 2, lines 1-31 and in figure 2 and respective portions of the specification that upon the transmitter receiving the feedback message (backpressure signal) from the receiver, the transmitter calculates the maximum resource fullness, thus controlling the number of packet to be transmitted based upon the allocation technique. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Rickard to include the teachings of Hunt in order to enhance performance based on transmission control, further reducing congestion from occurring in the network.

Referring to claims 25-31, Rickard discloses in pages 5, paragraph 4 to page 6 wherein that node is an intermediate device disposed between the computer and a target device, and wherein the step of sending the data element to the node includes the step of : formatting the data element (TTL) as a packet having a destination address (page 6, paragraph 3) that identifies the

Art Unit: 2664

target device and a TTL value which causes the node to consider the data element to be a stale packet upon receipt of the data element by the node as claim.

Referring to claim 32, 34, 36, 38, and 40, Rickard discloses in addition to page 5, paragraph 4 to page 6, on page pages 9 and 10 the method wherein the step of sending the data element (packet) to the node (144.228.10.81) includes, providing within the data element, a destination address (204.250.9.1, the address of the mustang.com) which targets a device that is different that the node (144.228.10.81) to route the data element in direction leading to the device through the node as claims.

3. Claims 2, 6, 10, 12, 16, 20 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Rickard ("Mapping The Internet With Traceroute) in view of Hunt et al. (U.S. Patent No. 5,898,671) as applied to claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21 and 24 above, and further in view of Karmi (U.S. Patent No. 6,535,523).

Referring to claims 2, 6, 10, 12, 16, 20 and 22, Rickard in view of Hunt fail to teach the step of acquiring, as the resource usage information, a history which identifies a combination of the multiple resources that processed the data element as a non-stale data element. Karmi teaches of a system of distributing the available capacity of resources with maximum resource utilization among node users. Karmi discloses in figure 4 and respective portions of the specification wherein the control unit receives information related to usage of resources, including history that identifies combination of the multiple resources that processed the data element as a non-stale data element. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Rickard in view of Hunt to include the teachings of Karmi in order to prevent overload and network congestion.

Art Unit: 2664

4. Claims 3, 7, 13, 17, and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Rickard ("Mapping The Internet With Traceroute) in view of Hunt et al. (U.S. Patent No. 5,898,671) as applied to claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21 and 24 above, and further in view of Ahearn (U.S. Patent No. 5,926,463).

Referring to claims 3, 7, 13, 17 and 23, Rickard in view of Hunt fail to explicitly teach of the parameter within the data element is a TTL field, wherein the signal is an ICMP error message and wherein the step of receiving includes the step of acquiring as the indication that the node of the network has removed the data element from the network, a notification that the limit to the number of remaining nodes which can process the data element within the network has been reached. Ahearn teaches of managing configurations of a computer network. Ahearn discloses in column 20, lines 65 to column 21, lines 61 of using the BA Traceroute tool, where router operates by sending out a packet to a DA with a TTL set to a small value. ICMP error message indicate the packet could not be delivered because the TTL expired. This process continues, increasing the TTL value until the destination is reached. Note that every router implements the ICMP TTL expired response. Since traceroute is used to test connectivity, once the ICMP comes back with an error message, the step of acquiring takes place in terms of having an indication that the node of the network has removed the data element from the network. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Rickard in view of Hunt to include the teachings of Ahearn in order to receive a confirmation message without a long latency period of status information regarding removed data element from the network.

Art Unit: 2664

5. Claims 33, 35, 37, and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Rickard in view of Hunt et al as applied to claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21 and 24-32, 34, 36, 38, and 40 above, and further in view of Beser et al.

Referring to claims 33, 35, 37, and 39, Rickard in view of Hunt discloses the method wherein the step of removing the data element from the network and sending the feedback signal including history of network resource usage. Rickard in view of Hunt fails to disclose a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even through the data element is stale by the time the node receives the data element. Beser et al. teaches of rapid removal of stale addresses, freeing valuable memory space. Beaser et al discloses in column 31, lines 10-62, that Address Resolution Protocol (ARP) allows for the association of a network address pair with a TTL value. In general, a TTL value is a timeout value for a single table entry whereas a cache timeout typically applies to the table as a whole. A table entry is automatically deleted when this time value has expired. Therefore, imposed TTL value can be chosen sufficiently small to prevent further communication between the network device and the data network should the network device fail to register properly. Thus, a feed back signal as taught by Hunt et al. in a router or a switch may process the packet as non-stale by node (switch or router) if the TTL is not equal to 0, even though the packet is stale by the time the destination node receives the packet (since the TTL=0). Therefore, it would have been obvious to modify the teachings of Rickard in view of Hunt to include the teachings of Beser in order rapidly remove stale network data ensuring reduction in latency and performance degradation.

Response to Arguments

6. Applicant's arguments filed 1/9/04 have been fully considered but they are not persuasive.

7. Referring to claims 1, 5, 9, 11, 15, 19 and 21, Applicant argues that the cited prior art does not teach or suggest, either alone or in combination, a method for obtaining resource usage information from a node of a network which involves sending a data element to the node and receiving, from the node, a signal including (i) an indication that the node has removed the data element from the network and (ii) resource usage information describing usage of resources within the node recited in claim 1. Applicant further argues that there is no suggestion or motivation to modify and combine the reference teachings. Examiner respectfully disagrees with the Applicants. Examiner redirects the Applicants to the Rickard reference on page 5, 4th and 5th paragraph. Rickard clearly discloses in the 4th paragraph of page 5 that, the sending machine could set [a data element to the router] TTL field in the Internet Protocol packet header to any value between 0 and 255. Each router that handled the packet decremented the TTL value in the packet header by one when it passed on the packet. If it (router) received a packet that had a TTL of 0 or 1, instead of passing on the packet, it KILLED it (data element). Furthermore, in this way, after a set number of "hops" through routers, in no case larger than 255, a packet died (became stale) and was REMOVED from the network. In addition, when a router kills a packet, the router sends a single (INTERNET CONTROL MESSAGE PROTOCOL-ICMP) error message to the packet originator indicating TIME EXCEEDED IN TRANSIT. Thus, the ICMP message is sent to the originator after a packet died and was removed from the network, providing a signal indication that the node (router) has removed the data element from the

Art Unit: 2664

network as claim. With respect to the limitation regarding receiving from a signal from a node (ii) resource usage information describing usage of resources within the node, as Examiner indicated in Office Action 6, Rickard fails to disclose this limitation. Examiner uses Hunt et al to address the (ii) limitation. Hunt discloses of a feedback message (backpressure signal) as disclosed in claim 9 and column 3, lines 20-55 that is sent back from a receiver (router) to the transmitter (packet or data element originator), giving the status of the resources within the node. Feedback controller 28 of the receiving switch or router or any node function to provide feedback data to the allocation controller of the transmitting packet originator. The feedback data includes state of fullness of the buffer pool and number of available buffers (resources). Thus, as indicated by the Applicants in the specification on page 5, lines 25 to page 6, lines 10 that in one arrangement, the network nodes includes multiple resources and a control module coupled to the multiple resources and such resources may include memory and buffer space. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Rickard to include in addition to an ICMP error message and a feedback (back pressure signal) signal as taught by Hunt et al in order to enhance performance by reducing congestion form occurring. Thus, claims 1, 5, 9, 11, 15, 19 stand rejected based on the reason provided above and respective dependent claims stand rejected based on the prior art as disclosed in the office action.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge

Art Unit: 2664

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for combining the feedback message of Hunt into Rickard's teachings would be to enhance performance that resolves problems of congestion from occurring.

With respect to Applicant's newly added claims 33, 35, 37, and 39, newly cited additional reference, Beser et al. provides a detailed explanation for the rejection. With respect to claims 32, 34, 36, 38, 40, 41 and 42 are rejected based on the same references as claim 1.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

Art Unit: 2664

(703)305-9051, (for formal communications; please mark "EXPEDITED PROCEDURE")

Or:

(703)305-5403 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 703-305-5639. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
February 11, 2004


Ajit Patel
Primary Examiner